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DEVELOPMENT AND EMPIRICAL EXAMINATIO?
OF A MANAGEMENT/BEHAVIORAL MODEL
DEPICTING WILLIAM G. OUCHI'S
THEORY Z MANAGEMENT CONCEPT

William G. Dean, Captain, USAF

LSSR 53-83

DEPARTMENT OF THE AIR FORCE
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Wright-Patterson Air Force Base, Ohio

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William G. Ouchi's conceptual work, <u>Theory Z: How American Business can meet the Japanese Challenge</u>, suggests that the key to modern organizational productivity rests with worker motivation and job involvement. The essence of Ouchi's theory lies in the ability of the Japanese organizations to coordinate people, not technology, to improve productivity. Ouchi recognizes the Japanese ideal of employee motivation and proposes a management formula for revitalizing American industry. Theory Z seeks to shrink the traditional hierarchical gulf separating management and labor, replacing it with reciprocal employee--employer trust and subtlety, consensual decision-making, and congruency of goals in an intimate work environment. The results of the empirical testing conducted for this thesis helped confirm the validity of Theory Z as a viable management concept. Multiple regression analysis revealed that a model of Theory Z, derived from Ouchi's descriptive remarks, was linearly related to both job satisfaction and job performance. High global trust was shown to be a significant predictor of job performance and a significant moderator of the job satisfaction/ performance relationship. Subtlety and intimacy, two variables seemingly unique to Theory Z, both emerged as significant predictors of job satisfaction and performance.

DEVELOPMENT AND EMPIRICAL EXAMINATION

OF A MANAGEMENT/BEHAVIORAL MODEL

DEPICTING WILLIAM G. OUCHI'S

THEORY Z MANAGEMENT CONCEPT

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Systems Management

By

William G. Dean
Captain, USAF

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has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

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CHAPTER I

PROBLEM STATEMENT AND LITERATURE REVIEW

Problem Statement

Industrial productivity in Japan has increased at 400% the rate in the United States since the Second World War (Ouchi, 1982). More specifically, data compiled by the U.S. Department of Labor shows that worker output per hour grew at a 29.4% rate in Japan between 1977 and 1981. In comparison, worker productivity in the United States grew at only a 4.5% rate during that same period. The statistics also reveal the United States lags significantly behind all other large industrial nations in improving productivity ("Answer to Ailing Industry: Overhaul at the Very Top," 1983).

William G. Ouchi's conceptual work, Theory Z: How American Business Can Meet the Japanese Challenge, suggests that the key to organizational productivity rests with worker motivation and involvement (Ouchi, 1982). Ouchi recognizes the Japanese ideal of employee motivation and proposes an adaptation for American industry to follow in developing employee incentives. The Theory Z management formula is designed to revitalize American business by emphasizing worker commitment, consensual decision-making,

reciprocal employer--employee trust and subtlety, and a more inti-
mate work environment. Theory Z seeks to shrink the hierarchical
gulf separating management from workers, thereby discarding
adversarial relationships and building a more cooperative and pro-
ductive work place.

Beyond the data gathered by Ouchi to build Theory Z, no
research efforts specifically intended to test the ability of Theory Z
to affect industrial productivity have been conducted (Sullivan, 1983).
While certain studies offer some evidence in support of Ouchi's
management construct, Theory Z requires direct validation prior to
acceptance and application by the American management community.

This thesis research seeks to accomplish two objectives:
first, develop (from Ouchi's (1982) descriptive remarks) a verifiable
model which identifies the key organizational and management vari-
ables of Theory Z and explains the interrelationships; and second,
empirically test the proposed model to assess its validity.

Literature Review

The intent of this literature review is to identify the com-
ponents of the Theory Z model developed by Ouchi and explain how
his construct relates to modern industrial productivity. Where
possible, Ouchi's model will be critiqued in light of modern manage-
ment research and knowledge.

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Figure 1 is a model representing Ouchi's (1982) description of Theory Z. The key components of this proposed model will be described in this literature review.

Ouchi (1982) professes his theory to be global in that it can be applied to any organization in any industrial nation. Ouchi argues that Japanese management techniques increase not only industrial productivity, but in general, can improve any organization's ability to perform. Organizational performance refers to how efficiently problems are solved and goals met (Hampton, Summer & Webber, 1978). Productivity, the quality and quantity of a worker's output, is simply one of many factors which combine to measure overall performance (Hampton et al, 1978). Productivity measurement is apparently used by Ouchi to describe the benefits of Theory Z since productivity goals are quantifiable and their achievement easily measured. For the remainder of this review, the discussion of Theory Z will be expanded to examine its impact not only on productivity, but also on the broader concept of organizational performance.

The roots of Theory Z lie in cultural imperatives derived from centuries of Japanese historical experience. Individual families could not grow enough independently to adequately feed themselves, but cooperation among families in the village produced a surplus. Living in such close proximity for hundreds of years, depending on

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Figure 1

CONCEPTUAL MODEL
OF
THEORY Z

CLIMATE OF
INTIMACY

ORGANIZATIONAL
GOAL
CONGRUENCY

FOSTER AND ENHANCE

TRUST

SUBTLETY

STIMULATE

ORGANIZATIONAL
COMMITMENT

ORGANIZATIONAL
COHESIVENESS

PROMOTE

CONSENSUAL
DECISION-
MAKING

GREATER
JOB
INVOLVEMENT

RESULTING
IN

GREATER JOB
SATISFACTION
AND
PERFORMANCE

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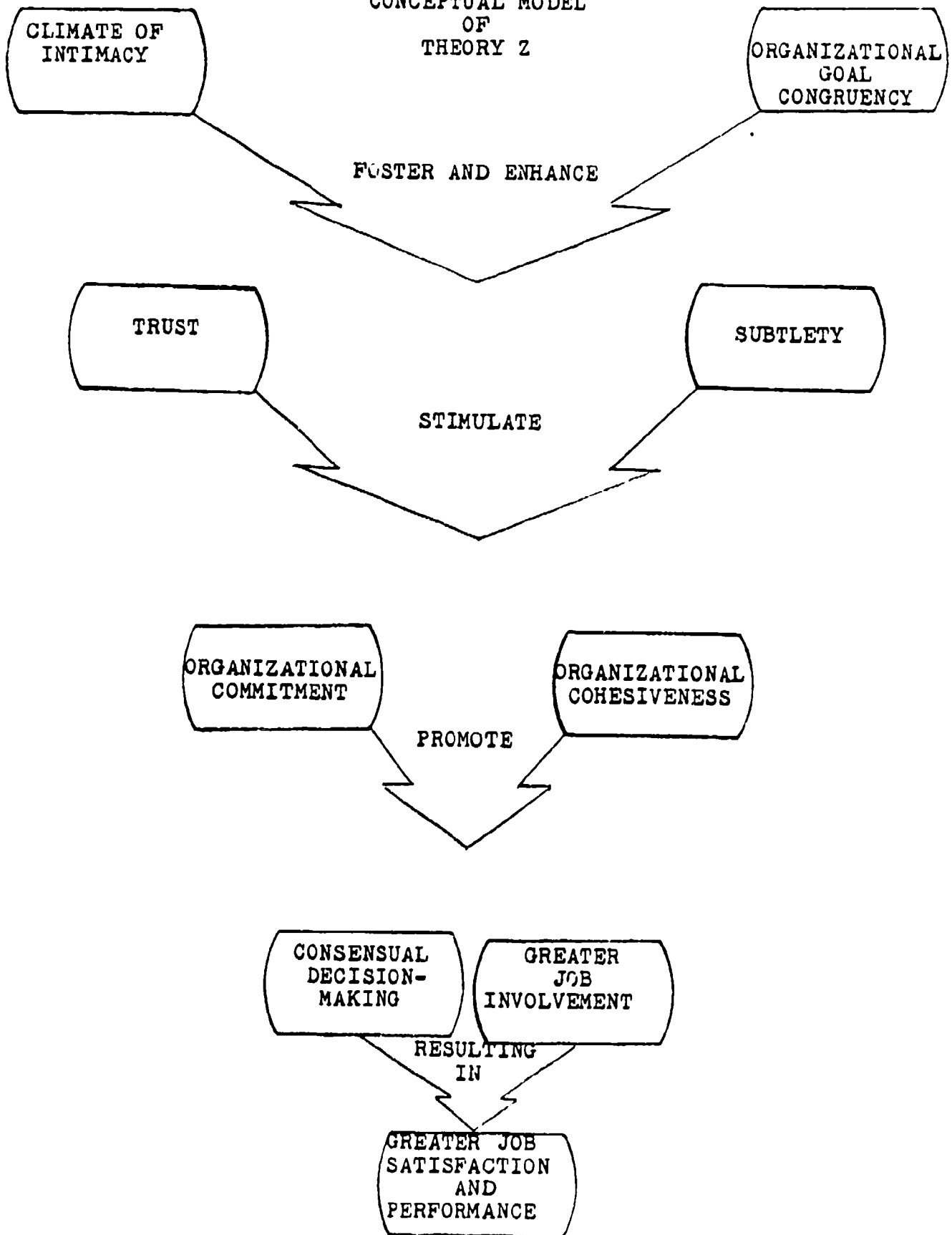
each other for food, and still other cultural traditions linked societal survival with the ability of the Japanese to develop a homogeniety of goals and purpose. Individual goals and welfare were of necessity subordinated to the common goals and welfare of the community (Ouchi, 1982).

Ouchi (1982) argues that this unity of purpose among the Japanese translates to the work environment and results in such high levels of commitment that an autonomous individual naturally seeks to work hard, cooperate, and benefit their organization. For the purpose of this literature review, the term organization is defined as an individual's work place.

Organizational Goal Congruency. Organizational research strongly indicates that goal congruency within an organization does lead to increased performance (Hampton et al, 1978). E.A. Locke (1978), a principal researcher on the effects of goals on performance, asserts that goals are the most immediate and direct motivational determinates of task performance.

When an organization's goals are shared by all, a true congruency of goals exists. The individuals in the organization (both managers and subordinates) either perceive their goals as being the same as the goals of the organization or, although different, see their goals being satisfied as a direct result of working for the organization. Consequently, the closer we get the individual's goals and

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objectives to the organization's goals, the greater will be the organizational performance (Hersey & Blanchard, 1977).

Conversely, in the situation where both managers and workers see their goals as conflicting with those of the organization, morale and performance will tend to be low and organizational progress will stagnate (Hersey & Blanchard, 1977).

Ouchi's contention that goal congruency relates significantly to job performance has received considerable research attention and is well accepted by the academic community (Hampton et al, 1978).

Climate of Intimacy. Ouchi (1982) next considers intimacy and defines it as the caring, support, and disciplined unselfishness for other members of the community developed through the close social relationships and dependence that characterized early Japanese life. Ouchi considers intimacy to be the common thread of Japanese culture and a key element of this theory. The connection between industrial productivity and intimacy among workers reflects a unique notion of Ouchi's and receives limited support from other literature. Intimacy requires an extremely close integration of an organization's work force at all levels. Intimacy necessitates that superior--subordinate relationships emphasize openness and sincerity and not be restricted by rigid hierarchical precepts. Managers and workers involved in an intimate work environment are sensitive and caring towards each other (Ouchi, 1982). Intimate relationships depend on

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understanding a person's complex and shifting needs. Management

recognizes personnel as being much more than replaceable cogs in

the organizational mechanism (Bennis & Slater, 1969). They come to

know each other as whole human beings.

> Intimacy involves a readiness to expose our weaknesses
> to others, or rather, a willingness to reveal ourselves in a
> manner so complete that others may find weaknesses there.
> The knowledge that nothing need be concealed brings on a
> profound sense of relief and of openness as well as a willingness
> to work hard, since contributions will be found out just as
> surely as mistakes (Ouchi, 1982:172).

Each worker's genuine concern for the well-being of the firm and his

fellow workers motivates him to tailor and marshal his skills and

energies to meet the needs of the organization (Ouchi, 1982). At both

of the Honda and Nissan plants operated in the United States, manage-

ment tries to play down its status and foster intimacy among

employees. Parking lots, for example, have no reserved spaces.

That means production workers have as much chance of parking close

to the plant as supervisors and even top executives. Likewise, every-

one from the president on down eats in the same cafeterias because

there are no executive dining rooms. At Honda, managers and

welders alike wear white uniforms with first names embroidered on

the front. At Nissan, everyone wears the same blue uniform ("UAW

vs. Japanese: An Uphill Battle," 1983). Managerial power, in a

Theory Z type firm, becomes the ability to collaborate and not the

ability to coerce or threaten (Bennis & Slater, 1969).

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Ouchi (1982) contends that homogeniety of goals and intimacy still pervade modern Japanese business philosophy forming the foundations of worker performance and the cornerstones of Theory Z.

According to Theory Z, a positive organizational climate combining goal congruency with intimacy will produce a synergy which fosters and enhances the development of trust and subtlety among work members (Ouchi, 1982).

Trust. "The first lesson of Theory Z is trust. Productivity and trust go hand in hand (Ouchi, 1982:5)." "Trust is a basic variable in human interaction and relationships (Corrazini, 1977:75)." Research has shown a high correlation between trust and the effectiveness and efficiency of counseling, organizational development, and education, to name a few examples. The difficulty with this research is that a lack of agreement exists as to the precise meaning and measurement of the term. Traditionally, trust has been discussed as a unidimensional construct leading to a great deal of inconsistency in research findings.

> Various definitions of trust have included such concepts as: expectancy, reliance upon others, faith, surrendering of control, consistency, mutuality, and utility for risk. In addition to multiple definitions of trust, there has been a concurrent multiplication of measurement instruments. This indicates that trust measures are often used without an examination of their operating characteristics or theoretical bases. This has led to the accumulation of data which are questionable. Is trust the same in all contexts, differing only in degrees, or are there several unique dimensions that contribute to its effect (Corrazini, 1977:75)?

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Several investigators have concluded that trust is indeed multi-dimensional. However, the studies to test this assertion had been, to the date of this report, relatively limited in the number of measurement instruments evaluated.

These inconsistencies prompted Corrazini to test whether trust is unidimensional, or rather, a complex multidimensional construct by pooling four separate measurement instruments and factor analyzing forty-nine variables.

The results of the analysis revealed four significant factors. These factors were given names. They were a suspicion factor, a personal risk-taking factor, a gambling factor, and a public credibility factor.

The identification of these four different factors confirms that trust is a complex variable with a number of component parts. This complexity suggests that a single score such as that obtained by many trust measurements is insufficient to give a full understanding to the variable, making a generalized interpretation of the results from various studies difficult.

Trust, to Ouchi (1982), represents a willingness to make individual sacrifices for the benefit of others in the group with the knowledge that such sacrifices will always be repaid. His perception of trust agrees with definitions offered by several researchers and should be amenable to the model (Deutsch, 1958; Driscoll, 1978;

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Rotter, 1971).

The importance Ouchi attaches to trust in the modern organi-
zation is echoed by other researchers. Increased trust appears to
be causally related to more rapid intellectual development, increased
originality, increased emotional stability, increased self-control,
and decreased physiological arousal to defend against threat (Zand,
1972). Studies by Deutsch (1958) indicate that no possibility for
rational behavior exists without the existence of mutual trust between
people. Remich (1981) observed several Japanese factories in oper-
ation and concluded that the underlying sense of trust between
management and labor was a major contribution to their performance.
An empirical study by Hollowitz and Matthiensen (Sullivan, 1983) found
that a positive linear relationship exists between manager--worker
trust and productivity. Rotter (1971) asserts that every decision in a
modern organization involves trusting someone else. The more com-
plex the organization, the greater the dependence on others. As trust
weakens, among co-workers, performance declines. Ouchi (1982)
remarks that trust within an organization makes implementing a
decision far easier because others tend to accept the idea that a
decision probably was made for the right reason, even though they
may not see it.

Ouchi's contention that trust follows from a climate of inti-
macy is supported by Adler. Adler (Hersey & Blanchard, 1977) found

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that children raised in an environment similar to what Ouchi describes as intimate, feel their need for power gradually transformed into a desire to perfect their social relationships. As adults, they want to interact with others without fear or suspicion in an open and trusting manner. These individuals seldom seek to manipulate their environment or the people in it, but instead are concerned with developing trust and respect for others.

In 1956, Scheen (Hampton et al, 1978) compared the performance of American POWs in the German prison camps of WWII to that of the Americans held by the Chinese during the Korean conflict. Scheen measured performance as prisoner resistance to enemy interrogation, morale, and escapes. He found performance significantly lower for the prisoners of the Chinese than for the German POWs. According to Scheen, POWs in Germany negotiated many escapes, seldom collaborated with the enemy, and were jubilant when liberated. In contrast, Americans confined by the Chinese rarely attempted escapes, continually supplied information to the enemy, and were quiet and sullen upon release. Scheen concluded that a lack of group trust undermined the performance of the latter POWs.

The Nazi's allowed their prisoners to establish and structure permanent organizations based on military rank. These particular circumstances proved to be a fertile environment for deep-seated trust to develop among the Americans. Escape attempts were

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frequent because escape is a group activity and the essential trust was present. Collaboration with the Germans was minimal since the prisoners trusted each other not to sell out.

The Chinese, however, intentionally never allowed the organizational structure necessary for trust to flourish. Rank among prisoners was ignored and transfers to other camps were frequent. Escape plans could not be executed without trust in fellow POWs and information exchange with the enemy was rampant in the absence of group trust and support. Scheen's research clearly indicates the impact of trust on performance in the POW environment.

Recent studies support Ouchi's assertion that organizational trust correlates with organizational performance. Experiments conducted in creative problem solving at Ohio State University showed that work groups displaying high levels of interpersonal trust consistently out-performed groups exhibiting low levels of trust (Klimoski & Karol, 1976). Additionally, research conducted by Friedlander (1970) found that work groups in which members have high trust in one another perform far more efficiently than groups in which members feel competitive. Kegan and Rubenstein (1973) studied several companies engaged in the research and development business. Their efforts established that the more members of a group trust their fellow co-workers, the more effective the group will be in its goal accomplishment.

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A possible explanation of this phenomenon is that high levels of organizational trust seem to increase the exchange of accurate, comprehensive, and timely information (Zand, 1972). Research by Roberts and Reilly (1974) indicates that a significant relationship exists between trust in the supervisor and a worker's perception of the accuracy of information received from the supervisor. "Trust facilitates interpersonal acceptance and openness of expression, whereas, mistrust evokes interpersonal rejection and arouses defensive behavior (Zand, 1972:229)." In organizations plagued by low trust, people are more likely to conceal valid information or communicate invalid information (Hersey & Blanchard, 1977).

> Persons lacking trust attempting to solve a problem jointly will attempt to minimize their vulnerability. There will be an increase in the likelihood of misunderstanding or misinterpretation. The social uncertainty produced by their low trust will increase the probability that underlying problems may go undetected or be avoided, and that inappropriate solutions may be more difficult to identify (Zand, 1977:230).

Inaccurate information has a direct and detrimental effect on any organization's performance. The life blood of an organization is information (Rourke, 1972). Information is the means by which management knows the extent that its goals are achieved. Concealed or invalid information serves to cripple management's ability to solve problems and exert positive control.

In creative problem solving, a reluctance to be honest and share valid information is antithetical to what is required to produce

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a maximum fluency of ideas. "At the very least it could result in 'norms of noninvolvement' which reduce commitment and participation and thus could contribute to inferior group performance (Klimoski & Karol, 1976:630)." A report by Sgro, Pense, and Orban (1980) found that trust between managers and subordinates might be considered as a potential moderator of successful leader--group interaction. Organizational goals may never be effectively communicated to or accepted by labor if their trust in management is low.

Quick (1980) concludes that trust between managers and subordinates serves as a motivator of worker performance. Trust between manager and subordinate is based upon a mutual realization that each is going to benefit from the subordinate's good performance. Quick writes that people would rather work in an atmosphere that is supportive, cooperative, and trusting, with co-workers contributing to one another, than in one which is combative and competitive, with people in conflict and out only for themselves. Quick supports the idea that trust moderates the job satisfaction/performance relationship. In order for any manager to motivate his employees to greater job performance, a trusting relationship is necessary.

Quick offers further substantiation to Ouchi's development of trust from intimacy.

> Before employees can reveal deep-rooted ambitions and work
> to achieve them, trust between management and the employee

must develop. Subordinates must be convinced that management is truely concerned about their growth and development. They must be assured that management won't ridicule them should they reveal and attempt to achieve these ambitions (Quick, 1980:121).

Schonberger (1982) reflects how trust within Japanese industry allows the Just-In-Time (JIT) manufacturing control system to work. Introduced by Toyota in 1972, JIT is used in the context of repetitive manufacturing. JIT emphasizes simplicity and avoidance of waste in manufacturing. Waste is defined as defective production or idle inventories.

Manufacturing planning and control by lots has traditionally dominated repetitive manufacturing in western industrialized countries. In Japan, however, a system of repetitive manufacturing has developed which attempts to eliminate lots. This is in contrast to manufacturing in the U.S. where subassembly, fabrication, and purchasing in support of final assembly is generally lot-oriented. Fundamental to lotless manufacturing is the JIT concept. The Toyota manufacturing system is geared to providing major assemblies just in time to go into final end products at the proper final assembly line work station; subassemblies just in time to go to major assemblies; and so on, down to the level of purchased part and even beyond that into and throughout the manufacturing stages in suppliers' plants. JIT means providing parts or assemblies on the right day, or even the right hour. Using JIT, orders to suppliers are small and

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frequent, often requiring daily or even twice daily deliveries. As a result, inventory costs as well as labor costs per set-up are dramatically reduced. Reductions in order processing costs are achieved through more efficient long-term materials management. This includes deliberate encouragement of local vendors, better and longer term vendor contracts, and close vendor relations.

Critical to this system is employee dedication to improving product quality. The system assumes a general worker consensus to reduce waste and rework and to smooth the output rate, thereby improving productivity. The worker's reward is the promise of lifetime employment.

Intense cooperation and trust is required between manufacturers and suppliers for JIT to function effectively. Lotless manufacturing depends on the absolute belief that parts needed for each day's operations will be delivered at the critical time. The Japanese, conditioned from centuries of learning to live with limited resources on a small land mass, have developed a system of manufacturing geared to these constraints. Manufacturers and suppliers are intentionally located in close proximity making once- or twice-a-day deliveries feasible. The sense of shared destiny, mutual dependence and trust among the Japanese allows JIT to work.

The existence of trus' also leads to a simplified organizational structure which has helped many Japanese companies become

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low cost producers according to Deutsch (1981). Japanese managers

assume that personnel are trustworthy, competent, and have the

company's best interests at heart. Highly paid executives whose only

functions are to review and pass on the work of other highly paid

executives are absent from the Japanese management structure.

"Instead, their operations are lean at the staff level and rich at the

line level-- where profits are (Deutsch, 1981:104-105)." Automakers

in the U.S. are beginning to see the connection between the Japanese

structual organization, low costs, and better productivity.

> Japanese foremen, for example, report directly to plant man-
> agers, while American foremen must wade through three extra
> layers of management. At Ford Motor Co., there are eleven
> layers of management between the factory workers and the
> chairman, while the Toyota Motor Co. makes do with six
> (Deutsch, 1981:104-105).

This excessive layering of management has had two negative impacts:

high overhead increasing costs, and a morass of red tape reducing

productivity. Deutsch concludes that trust at all levels of the organi-

zation permits the Japanese to organize in this less hierarchical

manner, concentrating more on productivity and profit, and less on

review and evaluation.

Driscoll (1978) experimentally showed that organizational

trust is a significant predictor of worker job satisfaction. This

finding is significant since Ouchi's theory ultimately depends on a

strong satisfaction/performance relationship. His investigation

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measured the relationship between job satisfaction and two dimen-
sions of trust, situational and global. Global trust, a personality
trait, refers to a general faith in the helpfulness of other people.
Situational trust is a specific measure of trust in a particular orga-
nization or individual.

A correlational analysis of the data revealed situational
trust as a significant predictor of job satisfaction, while global trust
was not significantly correlated. He concludes that situational trust
reflects the individual's assessment of the particular decision-
making system and is a significant predictor of an individual's over-
all satisfaction with an organization.

As an example of the problems facing the U.S., Ouchi (1982)
argues that, historically, American management has often mistreated
and alienated workers, causing them to place their trust in unions
and not in their organizations. Unions, in turn, have promoted
organizational inflexibility to protect the workers. Managers and
labor have inevitably come to perceive each other as adversaries,
rather than members of the same team. The overall result is usually
poor quality, low productivity, worker apathy, absenteeism, work
stoppages, and even employee theft.

A former GM assembly-line worker, now employed at the
new Nissan operation in Tennesee, described his experience in the
Detroit plant as:

Dog eat dog. You couldn't trust anybody. You never knew when
a supervisor was going to blame you for something he did, or
when another employee would point the finger at you. It just
never stopped. It wasn't unusual to have three fights a day
among employees ("Ways Lay-offs Change the Recalled Worker,"
1983:75).

Other GM employees admitted to frequently drinking during lunch

breaks and consistently permitting observed product flaws pass

uncorrected ("Ways Lay-offs...," 1983).

Most U.S. motivational schemes assume that workers know
how to raise productivity and improve quality, but they are
holding back for no justifiable reason. Operator indifference
or even sabotage are assumed to be the normal problems
management must combat (Cole, 1980:26).

Japanese senior management, on the other hand, treats people as

members of the corporate family, not as hired hands. In Japan, the

company is the people-- not the shareholders-- and, accordingly,

employees are important. Shareholders do well, too; but as a by-

product of the company's success ("American Myths vs. the Real

Reasons for Japanese Success," 1981).

In the Japanese firm, trust underscores the belief that goals

correspond and that no one individual, whether manager or subordi-

nate, will act in a self-serving manner. Rather than relying on

bureaucratic hierarchy and supervisory monitoring to direct behavior,

the Japanese rely on worker commitment and trust (Ouchi, 1982).

They emphasize and manage through shared values rather than

through procedures and systems. This builds a mutual trust and

confidence "that enables old friends and comrades to work well together with few detailed procedures and a powerful sense of direction ("American Myths...," 1981:55-56). Supervisors are trusted to be dependable and workers are trusted to respond with loyalty and commitment (Cole, 1979). Workers trust that management will take care of their interests (Cole, 1971).

Friedlander's (1970) work illustrated the importance of developing trust early in group development if durable increases in effectiveness are to be gained. The level of trust within a group appears to be a fairly enduring organismic state which does not change easily in the short-term. Once patterns of behavior, based upon fear and distrust, are learned and become an integral and accepted process by which the group operates, change in those relationships is exceedingly difficult to initiate.

This presents a potential problem for any American business wishing to convert to a Theory Z style of management. How can the tradition of manager--worker antagonism be overcome and a climate of trust be substituted? Traditions and heritage allow organizational trust to thrive in Japan, but research depicting how American business can plant the seeds of trust is limited.

Several American companies including Control Data Corporation have instituted a modified Theory Z philosophy to encourage employee trust in management. The written policy of Control Data

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states that during times of recession, everything will be done to
avert lay-offs. Wages will be reduced from the chairman of the
board down to assembly line workers, shared work shifts created,
and cutbacks made in all areas before anyone would be laid off
(Moreland, 1981).

Ouchi (1982) admits uncertainty in his blueprint for culti-
vating a Theory Z environment, but considers complete openness
between work group members as the key to trust development.
"Trust consists of the understanding that you and I share fundamental-
ly compatible goals in the long run, and thus we have reason to trust
one another (Ouchi, 1982:85)." Managers who can express openness
and candor with their subordinates can establish the basis for trust.

> Trust comes from knowing that, fundamentally, you and I desire
> a more effective working relationship together, and that neither
> desires to harm the other. One who seeks to conceal nothing
> is one who, in all likelihood, does not seek to harm me (Ouchi,
> 1982.85).

The GRIT proposal, as described by Lindskald (1978), is an
experimental method for developing feelings of trust between con-
flicting parties. GRIT deals with reducing tensions, easing fears
and fostering more circumspect decisions in which many alternatives
are considered, while modifying perpetual biases that fan the flames
of distrust and suspicion. GRIT is accomplished through a series of
announced conciliatory acts by one of the conflicting parties that
presumably activates reciprocation by the other party. The

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reciprocating acts serve the self-interests of both parties because
of the potential for reduction in tension while promoting stability. In
theory, the initiating party, management for instance, announces and
takes a series of conciliatory actions without demanding any recipro-
cation from labor. Labor, in turn, impressed by management's
voluntary benevolence, but primarily motivated by their own self-
interest to reduce tensions and seek greater job stability and security,
will eventually reciprocate with a conciliatory initiative. Management
then reciprocates, and a benign spiral of tension reduction is under-
way. The foundation for a trusting relationship is established,
allowing cooperation between management and labor to occur and
performance to improve.

Subtlety. The other important lesson that Theory Z trans-
lates from Japanese practice into American ways is subtlety. Ouchi
(1982) considers subtlety within the organization to mean that each
employee has a deep insight and understanding of the complex, frag-
ile, and constantly changing relationships between people.

> The sensitive manager who knows his people well can pinpoint
> personalities, decide who works well with whom, and thus put
> together teams of maximal effectiveness. These subtleties can
> never be captured explicitly, and any bureaucratic rule will do
> violence to them. If a foreman is forced, either by a bureau-
> cratic management or by an equally inflexible union contract,
> to assign work contracts strictly on the basis of seniority, then
> subtlety is lost and productivity declines (Ouchi, 1982:6).

Subtlety between managers and workers is always abstruse. Its

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presence, however, permits the manager to make those keen dis-
tinctions between his people that will enhance performance (Ouchi,
1982). Subtlety requires organizational values based on humanistic
ideals which replace the depersonalized, mechanistic value system
of bureaucracy (Bennis & Slater, 1969). Ouchi points to the success of
Japanese business as the prime evidence of the effect subtlety has on
performance. The open and sincere behavior displayed by Japanese
workers permits management to understand and utilize their talents
most efficiently. Increased performance is the natural byproduct of
this process (Ouchi, 1982).

> Productivity, trust, and subtlety are not isolated elements.
> Not only do trust and subtlety yield greater productivity through
> more effective coordination, trust and subtlety are inextricably
> linked to each other (Ouchi, 1982:7).

Managerial decisions made on the basis of subtlety cannot withstand
the scrutiny of an uninvolved outsider, such as a higher-up manager.
Unless the superior trusts the subordinate manager's judgment, sub-
tlety will have to be eliminated as a factor in decision-making in
favor of more defensible positions. "A lack of trust causes subtlety
to be thrown out of the window (Ouchi, 1982:7)."

Organizational Commitment and Cohesiveness. Trust and
subtlety form the underlying platform which serves to stimulate and
energize the strong organizational commitment and cohesiveness
characteristic of Japanese industry. Organizational commitment

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refers to the worker's willingness to work for the success of the
organization. Traditionally, Japanese believe in lifetime employ-
ment of workers. Once hired, an employee remains with that
company until mandatory retirement at age 55. The only act which
can prompt termination is untrustworthiness (Ouchi, 1982). "Life-
time employment forges a bond between workers and managers and
causes them to think alike (Remich, 1981:27)." Individuals antici-
pating long-term relationships have strong commitments to behave
responsibly and equitably towards one another (Ouchi, 1982).

> In return for the employee's contribution toward the company's
> growth and well-being, the profitable firm will provide him with
> a stable work environment and protect his welfare even during a
> period of economic slowdown (Hatvany & Pucik, 1981:474).

The individuals are also committed to learn and understand the
subtleties of the organization (Ouchi, 1982).

> Given its high premium on working together, it comes as
> no surprise that our Type Z company is characterized by many
> cohesive and semi-autonomous work groups, even though a Z
> company seldom undertakes any explicit attempts at team
> building. Instead, it creates a culture to foster interpersonal
> subtlety and intimacy, and these conditions encourage cohesive
> work groups. Individuals who are accustomed to depending upon
> one another, who have a long-term commitment to their working
> relationships, and who work well together, will form cohesive
> groups and are naturally more adept at problems they all must
> face (Ouchi, 1982:175).

Type Z here refers to an American company which has adapted the
Japanese methods of employee motivation.

> Trust, loyalty to the company, commitment to the job, goal

congruency, and organizational cohesiveness form the foundations of

Theory Z (Ouchi, 1982).

Consensual Decision-Making and Job Involvement. Consensual decision-making and job involvement are the final predictor variables considered by Ouchi (1982).

> As with all other characteristics of the Japanese management system, decision-making is embedded in a complex of parts that hang together and rely upon trust and subtlety developed through intimacy (Ouchi, 1982:47).

Rosen and Jerdee (1977) agree, noting that managerial willingness to employ consensual decision-making is closely related to and depends on trust in subordinates. Hollon and Gemmill (1977) found that individuals with a strong orientation towards trusting that the word of others can be relied upon experienced greater participation in decision-making, job satisfaction, and lower job tension than those with a weaker interpersonal trust orientation.

> When an important decision needs to be made in a Japanese organization, everyone who feels its impact is involved in making it. Making a decision this way takes a very long time, but once a decision is reached, everyone affected by it will be likely to support it (Ouchi, 1982:37).

This process has two advantages; first, it permits everyone to participate in determining the basis on which their efforts will be judged. Second, involving labor in the planning process increases their commitment to the goals established. Research indicates that decisions arrived at in concert between management and workers tend to

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reduce resistance to change within the organization and increase

performance (Hersey & Blanchard, 1977). "Involvement leads to the

development of trust relationships and highly cohesive work groups

which tend to compel even greater involvement (Sullivan, 1983:132)."

Behavioral scientists McGregor and Likert (Hampton et al,

1978) both ardently support the belief that consensual decision-making

and goal setting procedures are necessary to improve worker moti-

vation and performance. As McGregor put it:

> Genuine commitment is seldom achieved when objectives are
> externally imposed. Passive acceptance is the most that can
> be expected; indifference or resistance are more likely con-
> sequences. Some degree of mutual involvement in the determi-
> nation of objectives is a necessary aspect of managerial planning
> (Hampton et al, 1978:467).

Ouchi (1982) feels that consensual decision-making reinforces

the individual's sense of affiliation to his company, further enhancing

his conviction that the common good, which includes his welfare, is

being achieved.

Hatvany and Pucik (1981) offer a similar view of Japanese

business.

> Work is structured so that it can be carried out by groups
> operating with a great deal of autonomy. Open communication
> is encouraged. Information about pending decisions is circu-
> lated widely before the decision is actually made. Active,
> observable concern for each and every employee is expressed
> by supervisory personnel (Hatvany & Pucik, 1981:471).

The positive interactions of these variables forms the model

which Ouchi calls Theory Z. The merit of a Theory Z style of

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management, according to Ouchi (1982), is that increased job performance is realized through worker job satisfaction. The worker who feels that his organization recognizes and meets his personal needs, that his work relationships are intimate and trusting, and that he is a valued member of the team, will enjoy what he is doing and perform well. High performance and job satisfaction are very complementary.

The essence of Ouchi's theory lies in the ability of the organization to coordinate people, not technology, to achieve productivity. "The objective of Theory Z is to achieve commitment of employees to the development of a less selfish, more cooperative approach to work (Ouchi, 1982:84)." Hatvany and Pucik (1981:469) state that "Japanese management is characterized by a focus on the maximum utilization of human resources." Ouchi is not advocating that American businesses attempt to mirror the Japanese. He is suggesting, however, that the keys to worker motivation are universal and that the Japanese ideal can be modified to fit the American requirement. Ouchi (1982) states that the slow growth in U.S. productivity stems directly from industry's devotion to archaic management practices.

> As a nation, we have developed a sense of the value of technology, and of a scientific approach to it, but we have taken people for granted. The problem of productivity in the United States will not be solved with monetary policy, nor through more investment in research and development. It will only be remedied when we learn how to manage people in such a way that they can work together more effectively. This is what we

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have to learn by studying the Japanese (Ouchi, 1982:4).

Cole (1980) echoes Ouchi's sentiments and urges American industry to trust their employees and accept that they will work to implement organizational goals if given a chance. Managers should realize that work is a cooperative effort requiring decentralized and consensual decision-making. Employee accomplishments should be recognized.

In his book, Ouchi (1982) details a blueprint for companies to follow in transforming themselves into participative organizations. The process requires that the organizations nurture and develop trust, intimacy, subtlety, and each of the other components of Theory Z presented in this report.

In doing so, the new Type Z organization will enjoy significantly improved performance and productivity as a direct result of worker satisfaction (Ouchi, 1982). Theory Z is built on the premise that employee job satisfaction strongly correlates with job performance. Job satisfaction can be defined as the favorableness or unfavorableness with which employees view their work (Davis, 1977). It expresses the amount of congruence between the worker's expectations of the job and the fulfillment of needs and rewards the job provides. Ouchi considers his model organization as representing the ideal work environment for assuring the congruency of expectations and meeting employee needs. As expressed earlier, Theory Z

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is concerned solely with the management of people to obtain maximum employee job satisfaction and maximum job performance.

The potential pitfall in Ouchi's assertion is that although job satisfaction intuitively seems correlated with job performance, research has found the link between the two is often small and statistically insignificant. Job satisfaction h.s been shown to be related to employee absence, turnover, and accident rates, but not performance (Davis, 1977). This represents a major problem concerning the overall validity of Ouchi's model that needs to be addressed. Theory Z management may well stimulate employee job satisfaction, but its correlation with job performance seems questionable. Should empirical testing of the model fail to establish a strong connection between the variables, the credibility of Theory Z as a viable management tool will be difficult to support.

Scope and Research Hypotheses

The thrust of the subsequent analysis will seek to establish if the variables depicted by the model in Figure 1 are predictors of job satisfaction or job performance; and if employee trust is the primary factor influencing the job satisfaction/performance relationship in the modern organization. To that end, the following hypotheses were tested:

Hypothesis One: Job satisfaction is linearly correlated with

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trust.

Hypothesis Two: Job performance is linearly correlated with trust.

Hypothesis Three: Job satisfaction is linearly related to the set of predictor variables.

Hypothesis Four: Job performance is linearly related to the set of predictor variables.

Hypothesis Five: Trust explains most of the variation in a linear relationship between job satisfaction and the predictor variables.

Hypothesis Six: Trust explains most of the variation in a linear relationship between job performance and the predictor variables.

Hypothesis Seven: Under conditions of high trust, trust moderates the job satisfaction/performance relationship.

Hypothesis Eight: Under conditions of low trust, trust does not moderate the job satisfaction/performance relationship.

CHAPTER II

METHODOLOGY

Assessing the validity and applicability of Theory Z requires
a careful and thorough analysis of the impact of each major model
variable on the job satisfaction/performance relationship. This
analysis focused on examining the influence of trust on that relation-
ship. The methods of analysis were three-fold: first, determine the
strength of association between trust, satisfaction, and performance;
second, establish if a statistically significant relationship between
the model's predictor variables, satisfaction and performance (the
criterion variables) exists, and if so, how much of that relationship
is explained by trust; and third, determine if and how trust acts as a
moderator of the satisfaction/performance relationship.

Data

This analysis relied upon data collected as part of an on-
going study of work attitudes conducted by the Air Force Institute of
Technology's (AFIT) Department of Organizational Sciences. The
sample data, obtained by survey questionnaires, measure the
attitudes of members of various Air Force organizations located
throughout the United States. The demographics collected on the

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sample are summarized in Table 2.1.

Table 2.1

Sample Demographics

Sample Number=808	
AGE (YEARS)	NUMBER
Less than 20	78
20-25	97
26-30	116
31-40	148
41-50	136
51-60	138
More than 60	94
Missing Data	1
SEX	NUMBER
Male	275
Female	83
Missing Data	450
EDUCATION	NUMBER
Less than a Bachelor's Degree	582
A Bachelor's Degree or more	225
Missing Data	1

Measures

The survey, administered by personnel from the AFIT
Department of Organizational Sciences, was voluntary and partici-
pants were assured that their responses would remain anonymous.
The surveys were sanctioned by the management of the client organi-
zation and the questionnaires were completed during the normal duty
hours of the participants. A copy of the questionnaire is included as
Appendix A.

The questionnaire contained measures of each of the major
variables considered by Ouchi. The specific measures, developed by
members of the AFIT faculty, were adapted from many sources and
measurement instruments (Ovalle, 1983). Construct validity and
internal consistency of the measures were checked using factor
analysis/varimax rotation and the Cronbach alpha technique.

Job Satisfaction. Job satisfaction was measured from the
responses to five questions. These questions measured overall job
satisfaction, satisfaction with co-workers, satisfaction with the work
itself, satisfaction with the work area, and satisfaction with the
equipment, information, and supervision available to do the work.
Participants were asked to answer each question on a seven-point
scale with possible responses ranging from: 1- delightful; 2- pleased;
3- mostly satisfied; 4- mixed; 5- mostly dissatisfied; 6- unhappy;
7- terrible.

Job Performance. Job performance is a multidimensional

construct. Five facets of job performance were measured by asking

each survey participant's direct supervisor to rate the participant's

typical performance as compared to co-workers. Performance was

compared according to quantity and quality of work, efficiency of

work, problem anticipation, and adaptability to sudden changes in

work. The scale of possible responses ranged from: 1- far worse;

2- much worse; 3- slightly worse; 4- about average; 5- slightly

better; 6- much better; 7- far better. A copy of the rating form is

included as Appendix B.

Trust. Three statements were used to measure global trust.

High scores suggest selfishness, projection of hostility, excitability,

and tenseness. Low scores suggest a trusting, unselfish, and

optimistic orientation (Corrazini, 1977).

Statement (1) Most people are not always straightforward

and honest when their interests are involved.

Statement (2) In these competitive times one has to be alert

or someone is likely to take advantage of you.

Statement (3) It is safe to believe that in spite of what

people say, most people are primarily interested in their own

welfare.

The rating scale of responses showing how participants agreed or

disagreed with the statements was: 1- strongly disagree;

2- moderately disagree; 3- slightly disagree; 4- neither agree nor disagree; 5- slightly agree; 6- moderately agree; 7- strongly agree.

Subtlety. Subtlety between managers and subordinates was measured by asking survey participants to indicate their agreement with the statement: My supervisor knows his/her workers very well; that is, he/she can pinpoint personalities and thereby decide who works well with whom. Possible responses ranged from: 1- strongly disagree; 2- moderately disagree; 3- slightly disagree; 4- neither agree nor disagree; 5- slightly agree; 6- moderately agree; and 7- strongly agree.

Goal Congruency. The degree of congruency of goals between the organization and its members was measured by participant response to the following question: To what extent are your organization's goals compatible to your own personal goals? Possible responses were: 1- not at all; 2- to a very little extent; 3- to a little extent; 4- to a moderate extent; 5- to a fairly large extent; 6- to a great extent; and 7- to a very great extent.

Intimacy. Ouchi's notion of intimacy was rather vague and difficult to define operationally. However, the idea which surfaced repeatedly in his consideration of intimacy and seems to reflect the essence of this variable is how caring the organization is towards its workforce. In order to measure intimacy, survey participants were asked to rate their organization according to five seven-point bipolar

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rating scales. The measure was presented as:

Unconcerned--1--2--3--4--5--6--7--Concerned

Impersonal--1--2--3--4--5--6--7--Humane

Uncaring--1--2--3--4--5--6--7--Caring

Disinterested--1--2--3--4--5--6--7--Interested

Aloof--1--2--3--4--5--6--7--Friendly

Participants were asked to rate where their organization fell between the two extremes.

Consensual Decision-Making. Survey participants responded to five statements indicating the degree to which they agreed or disagreed with each statement:

(1) Within my work group the people most affected by decisions frequently participate in making the decisions.

(2) In my work group, there is a great deal of opportunity to be involved in solving problems which affect the group.

(3) I am allowed a significant degree of influence in decisions regarding my work.

(4) I am allowed to participate in decisions regarding my job.

(5) My supervisor usually asks for my opinions and thoughts in decisions affecting my work.

The scale of possible responses ranged from: 1- strongly disagree; 2- moderately disagree; 3- slightly disagree; 4- neither agree nor

disagree; 5- slightly agree; 6- moderately agree; and 7- strongly agree.

Organizational Cohesiveness. The variables were measured via survey responses to three statements.

Statement (1) There is a high spirit of teamwork among my co-workers.

Statement (2) Members of my work group take a personal interest in one another.

Statement (3) If I had a chance to do the same kind of work for the same pay in another work group, I would stay here in this work group.

The range of possible responses included: 1- strongly disagree; 2- moderately disagree; 3- slightly disagree; 4- neither agree nor disagree; 5- slightly agree; 6- moderately agree; and 7- strongly agree.

Organizational Commitment. A fifteen item instrument was included in the survey and used to measure organizational commitment. Responses to the fifteen items were arrayed on seven-point scales ranging from one (strongly disagree) to seven (strongly agree). The fifteen items used to measure the variable are listed in Appendix A in the section entitled Organizational Information, and are numbers 20-34.

Job Involvement. A job involvement scale developed by

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Steel, Kohntopp and Horst (1980) was used to measure this variable. Again possible responses ranged from: 1- strongly disagree; 2- moderately disagree; 3- slightly disagree; 4- neither agree nor disagree; 5- slightly agree; 6- moderately agree; 7- strongly agree. The measurement items were:

Statement (1) I often have a chance to try out my own ideas.

Statement (2) I often have to use the skills I have learned for my job.

Statement (3) I often have the chance to do things my own way.

Statement (4) I often have the chance to do the kinds of things I am best at.

Statement (5) I often feel at the end of the day that I've accomplished something.

Data Analysis

Three major statistical tests were used to evaluate the influence of trust in job satisfaction and performance. Each is a parametric test, requiring interval scale data. The data obtained from the survey are interval scale data. In order to facilitate understanding of the rationale behind these tests, a brief discussion of each is provided.

Correlational Analysis. The first step in this data analysis

was to determine the statistical relationships between trust, job satisfaction, and performance. Bivariate correlation is a statistical tool which provides an index of linear relationships between variables (Nie et al, 1975). These indexes, called correlation coefficients, indicate the degree to which variation in one variable is related to variation in another (Nie et al, 1975). The coefficients were calculated using the PEARSON CORR subprogram contained in the Statistical Package for the Social Sciences (SPSS) (Nie et al, 1975). The statistical significance of each coefficient was evaluated using a two-tailed test and a confidence level of 95%.

The strength of correlational analysis lies in the relative simplicity of determining if a linear relationship exists between two variables. The drawback to the technique is that a significant correlation between variables does not imply the presence of a causal relationship (Nie et al, 1975).

Multiple Regression Analysis. The essence of Ouchi's (1982) theory is the prediction that greater job satisfaction and performance are realized through an organizational environment which incorporates high values of the model's predictor variables. Multiple regression analysis determines the relationship between a criterion variable and a set of predictor variables. The analysis was performed using the REGRESSION subprogram contained in SPSS. The least-squares method was used for calculating a regression line.

The resulting linear model provides a "best fit" to the data by minimizing the sum of the squared deviations of the actual individual criterion variable values about the predicted values of criterion variables.

Both job performance and job satisfaction were analyzed as criterion variables. The results of the analysis determined if job satisfaction and performance were statistically related to the model's set of predictor variables as argued by Ouchi (1982). The model was tested to a 95% confidence level.

Stepwise inclusion of variables was used to build the model. This method runs a simple linear regression with each of the predictor variables. It picks the predictor variable that explains most of the variation of the criterion variable and constructs a regression model with that variable. It then continues to add predictor variables in the order which explains the largest portion of the remaining variance given the variables already in the model. Accordingly, Ouchi's (1982) claim that trust is the most significant variable in his model was evaluated.

Moderated Regression Analysis. The final analysis procedure was to determine if the statistical relationship between job satisfaction and performance is moderated by the effects of trust in the organization.

Moderated regression techniques place a higher order term

in the moderated equation than is contained in the ordinary or linear regression equation (Zedeck, 1971). A test of the moderated regression equation is made to determine if the higher-order term contributes to the prediction beyond that of the unmoderated regression equation. The data were separated into two subgroups and tested according to level of trust. High trust groups consisted of survey responses greater than the sample mean. Low trust groups consisted of responses less than the sample mean.

The approach involved generating two multiple R^2s (coefficients of determination), the first using satisfaction and trust as linear predictors of job performance, and the second using satisfaction, trust, and the satisfaction/trust product term as predictors. If the R^2 of the moderated equation is significantly greater than the R^2 of the ordinary equation, it can be concluded that satisfaction and trust interact in the prediction of job performance (Lopez, 1982). The multiple R^2 measures the degree of linear dependence of job performance on trust and satisfaction. The regression analysis was accomplished using variations of the multiple regression techniques available through SPSS. The data were tested to a 95% confidence level.

To account for missing data, pairwise deletion, a SPSS program option, was utilized for each of the three statistical tests. With this option, a case is omitted from computation of a given sample

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statistic if a variable is missing.

Statistical Significance of Variables Added
to the Regression Equation

Important in this analysis was determining the relative con-
tribution of each predictor variable to the explanation of the variation
in the criterion variable. To test the statistical significance of a
variable added to the regression equation, the following test was
employed:

$$F = \frac{(R^2_{total} - R^2_{subset})/(K_1 - K_2)}{(1 - R^2_{total})/(N - K_1 - 1)}$$

where: N = total number cases considered

K_1 = number of independent variables of the larger R^2

K_2 = number of independent variables of the smaller R^2

R^2_{total} = The coefficient of determination for the equation
containing K_1 variables

R^2_{subset} = The coefficient of determination for the equation
containing K_2 variables

Degrees of freedom for the numerator = $(K_1 - K_2)$

Degrees of freedom for the denominator = $(N - K_1 - 1)$ (Kerlinger &

Pedhazur, 1973:70).

Significant predictor variables add information to the regres-
sion equation which helps explain the variation in the criterion vari-
able. This information enhances the overall accuracy and under-
standing of the model. Variables found to be non-significant

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contributed little useful information to the regression and were excluded from the development of a best-fitting model.

Similarly, with the inclusion of a variable into the regression equation, the amount of error, or uncertainty, contained in the model should decrease. Any variable, which upon inclusion increased the error, was also excluded from the best-fitting model. Error was measured as mean squared error (MSE) (McNichols, Undated).

CHAPTER III

RESULTS

The results of the data analysis presented in this chapter provide the empirical foundation necessary to begin assessing the validity of Ouchi's Theory Z. Each research hypothesis will be restated, followed by the corresponding test result. The format of the chapter includes the results of several "post-hoc" tests performed in an effort to understand some peculiarities encountered in hypothesis testing. Table 3.1 lists the means, standard deviations, and Cronbach reliability estimates for each variable.

Hypothesis One: Job satisfaction is linearly correlated with trust.

Pearson Correlations for job satisfaction, job performance, and trust are presented in Table 3.2. The resulting coefficient clearly indicates that the relationship between trust and job satisfaction is not statistically significant.

Hypothesis Two: Job performance is linearly correlated with trust.

The resulting linear correlation between trust and job performance is statistically significant, but negative. This indicates that high levels of trust actually led to lower levels of job

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Table 3.1

Descriptive Statistics

Variable	Mean	Standard Deviation	Reliability
Intimacy	21.2	6.5	0.77
Goal Congruency	4.2	1.7	*
Trust	12.1	5.6	0.82
Subtlety	3.6	2.2	*
Organizational Commitment	60.3	11.1	0.62
Cohesiveness/ Coordination	14.3	5.4	0.77
Consensual Decision-Making	21.5	6.5	0.77
Job Involvement	21.0	7.8	0.81
Job Satisfaction	19.8	5.6	0.72
Job Performance	22.7	7.6	0.80

* Single Variable

Table 3.2

Pearson Correlations Between
Job Performance, Job Satisfaction and Trust (N=806)

	1.	2.	3.
1. Job Performance	1.000		
2. Job Satisfaction	.0666*	1.000	
3. Trust	-.1929**	.0154	1.000

* $\underline{p} \leq .05$

** $\underline{p} \leq .001$

performance. This result directly contradicts Ouchi's prediction that higher levels of trust generate better performance.

Hypothesis Three: Job satisfaction is linearly related to the set of predictor variables.

The results of the stepwise regression of the model reveal that the set of predictor variables, with the exception of trust, is significantly linearly related to job satisfaction. Table 3.3 summarizes the results. Upon further analysis, however, the results change slightly. An evaluation of the statistical significance of each variable as it is added to the regression equation shows that only organizational commitment, subtlety, and goal congruency are significant predictors of job satisfaction. Additionally, inclusion of consensual decision-making, intimacy, and job involvement increased

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the amount of error contained in the model. Only 10.7% of the variation in job satisfaction is explained by the significant variables. Evidently, additional variables, other than those included in this particular Theory Z model, are important in explaining job satisfaction.

Table 3.3

Multiple Regression Results Using
Job Satisfaction as the Criterion Variable (N=806)

Variable[1]	R^2	Test Statistic F-Value	MSE
1. Organizational Commitment	.0872	76.668*	28.635
2. Subtlety	.1000	11.415*	28.268
3. Goal Congruency	.1069	6.180*	28.087
4. Organizational Cohesiveness	.1089	1.811	28.058
5. Consensual Decision-Making	.1095	0.588	28.073
6. Job Involvement	.1097	0.154	28.102
7. Intimacy	.1098	0.048	28.136

[1] Variables listed in order of stepwise inclusion.
Overall model F-ratio value= 14.037.
* Significant predictor at the 95% confidence level.

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Hypothesis Four: Job performance is linearly related to the set of predictor variables.

The entire set of predictor variables is linearly related to job performance at a statistically significant level. However, detailed analysis indicates that goal congruency and organizational cohesiveness were non-significant predictors and goal congruency caused an increase in the error contained in the model. With these variables removed, only 13% of the variation in job performance is explained. As with job satisfaction, many variables important in explaining job performance are evidently absent from the model. Table 3.4 summarizes the results.

Hypothesis Five: Trust explains most of the variation in a linear relationship between job satisfaction and the predictor variables.

Consistent with the Pearson Correlation results obtained for Hypothesis One, trust did not enter into the linear model obtained by multiple regression predicting job satisfaction. Trust is not a significant predictor of job satisfaction.

Hypothesis Six: Trust explains most of the variation in a linear relationship between job performance and the predictor variables.

Trust should have been the first variable to enter the model if it was the most important in explaining job performance as

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Table 3.4

Multiple Regression Results Using
Job Performance as the Criterion Variable (N=806)

[1]Variable	R^2	Test Statistic F-Value	MSE
1. Subtlety	.0629	53.926*	54.736
2. Job Involvement	.0981	31.252*	52.749
3. Trust	.1131	13.573*	51.935
4. Organizational Commitment	.1186	4.945*	51.680
5. Consensual Decision-Making	.1259	6.691*	51.315
6. Intimacy	.1313	4.991*	51.059
7. Organizational Cohesiveness	.1328	1.400	51.036
8. Goal Congruency	.1331	0.270	51.084

[1] Variables listed in order of stepwise inclusion.
Overall model F-ratio value=14.696.
* Significant predictor at the 95% confidence level.

predicted by Ouchi. The results of the regression indicated trust

entering third, however, behind subtlety and job involvement. The

addition of trust to the model explained another 1.5% of the variation

in job performance. The results show that trust, although not the

most explanatory variable, was still a significant predictor of job

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performance. The most interesting aspect of the regression was that the resulting beta-weight for trust was negative (-.172). This, in concert with the result obtained from testing the second hypothesis, says that increased levels of trust actually decreases performance. Again, this result is in direct conflict with Ouchi's contentions.

Hypothesis Seven: Under conditions of high trust, trust moderates the job performance/satisfaction relationship.

Table 3.5 presents the two pairs of R^2's, for both the high and low trust groups. Under conditions of high trust, the R^2 for the moderated equation is significantly greater than the R^2 for the linear equation. Accordingly, trust did moderate the relationship between job performance and job satisfaction for the high trust group. Additionally, the beta weight for trust, in both the linear and moderated equations, was positive; 0.386 and 1.563 respectively. This result is consistent with Theory Z predictions and adds complexity to the earlier results. Higher levels of trust among highly trusting people does appear to increase performance.

Hypothesis Eight: Under conditions of low trust, trust does not moderate the job satisfaction/performance relationship.

Although the moderated R^2 is greater than the R^2 for the linear equation, the increase is not significant, thus substantiating the hypothesis. Examining the beta-weights from the regressions reveals, once again, an inverse relationship between trust and job

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Table 3.5

Linear and Moderated Multiple
Regressions Predicting Job Performance

	Linear R^2	Moderated R^2	Test Statistic F-Value
High Trust Group (N=334)	.0435	.0744	11.016*
Low Trust Group (N=401)	.0199	.0265	2.237

* Significant at the 95% confidence level.

performance. Both of the trust beta-weights for the linear and moderated equations were negative, -0.241 and -1.144 respectively. These results indicate that among low-trusting people, increasing the level of trust between managers and workers degrades performance.

Post-Hoc Tests

Finding the negative relationship between trust and job performance was unexpected and directly opposed to Ouchi's prediction. The results from the moderated regressions revealed that a certain complexity exists in the interpretation of that relationship. The trust/performance relationship appears positive for high trusting groups and negative for low trusting groups. In an attempt

to further analyze the relationship several "Post-hoc" tests were run.

Test One. The survey data contained job performance self-
appraisals. Each participant compared and rated their performance
to co-workers. Measured were quantity and quality of their work,
efficiency, problem solving capability, and adaptability to unexpected
changes. The possible responses ranged from 1- far worse to 7- far
better.

A Pearson Correlation between the trust variable and this
measure of performance yielded results consistent with the earlier
test. Performance and trust were linearly related, but negative
(r = -.1778; p < .001).

Test Two. A Pearson Correlation with trust and job perfor-
mance was run splitting the sample into high and low trust groups.
As with the moderated regressions run before, the sample mean for
trust was used to divide the data. Testing to a 95% confidence level,
the results indicate that trust is linearly and positively correlated to
job performance for the high trust group (r = .1986; p < .001). Con-
versely, for the low trust group, trust is not linearly correlated to
performance (r = -.0789; p > .05).

Test Three. Using the high trust data, the entire Theory Z
model was regressed with job performance as the criterion variable.
The results show that under conditions of high trust, Ouchi's model
explains more of the variation in job performance than it did when the

entire sample was regressed. More than 19% of the variation in job

performance is now explained by the significant variables. Results

are presented in Table 3.6

Table 3.6

Multiple Regression Results Using
Job Performance as the Criterion Variable
Under Conditions of High Trust
(N=334)

Variable[1]	R^2	Test Statistic F-Value	MSE
1. Subtlety	.0916	33.473*	34.444
2. Job Involvement	.1503	22.880*	32.314
3. Consensual Decision-Making	.1649	5.749*	31.857
4. Trust	.1779	5.218*	31.455
5. Intimacy	.1913	5.544*	31.035
6. Organizational Commitment	.1931	0.718	31.062
7. Goal Congruency	.1934	0.101	31.148
8. Organizational Cohesiveness	.1935	0.040	31.240

[1] Variables listed in order of stepwise inclusion.
Overall model F-ratio value = 9.744.
* Significant predictor at the 95% confidence level.

Test Four. The data was further polarized to examine the results of regressing the Theory Z model on job performance under conditions of very high trust. Only surveys indicating trust responses greater than the mean plus one standard deviation were used. The results show a considerable increase in the amount of variation in job performance that is explained by the model. Considering only statistically significant variables and those decreasing the error contained in the model, 28.39% of the variation is explained. The results indicate that Theory Z becomes a more viable means of explaining worker job performance as the level of trust rises. Results are shown in Table 3.7.

Table 3.7

Multiple Regression Results Using
Job Performance as the Criterion Variable
Under Conditions of Very High Trust
(N=126)

Variable[1]	R^2	Test Statistic F-Value	MSE
1. Subtlety	.1661	24.695*	23.187
2. Intimacy	.2081	6.524*	22.198
3. Job Involvement	.2370	4.625*	21.563
4. Organizational Cohesiveness	.2567	3.209	21.179
5. Trust	.2839	4.588*	20.574
6. Consensual Decision-Making	.2871	0.538	20.654
7. Goal Congruency	.2884	0.213	20.791
8. Organizational Commitment	.2888	0.065	20.958

[1] Variables listed in order of stepwise inclusion.
Overall model F-ratio value = 5.939.
* Significant predictor at the 95% confidence level.

CHAPTER IV

DISCUSSION

Conclusions

Several interesting conclusions concerning the validity of
Theory Z follow from these test results.

First, the lack of a statistically significant linear relation-
ship between global trust and job satisfaction substantiates the finding
reported by Driscoll (1978). The trust variables used in this analysis
measured the individual's trust of people in general and not trust in
their specific organization or co-workers. The results of the corre-
lational and regression analyses between trust and job satisfaction
help confirm Driscoll's conclusion that global trust is not a significant
predictor of job satisfaction (Driscoll, 1978).

As a set, the remainder of the Theory Z variables did enter
the regression predicting job satisfaction at a statistically significant
level. However, only three of the variables were, themselves,
significant predictors. Organizational commitment explained most of
the variation in job satisfaction. The result supports Ouchi's (1982)
prediction that workers satisfied that their job fulfills their needs and
expectations are willing to work for the overall success of their
organization.

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Subtlety, which Ouchi describes an inextricably linked with trust, was the second significant variable to enter the regression. Subtlety, as measured by the survey, was a situational variable. Its significance illustrates how worker satisfaction is enhanced when supervisors understand the delicate and dynamic relationships between subordinates. The sensitive manager, who knows his people well and can pinpoint personalities, is better able to decide who works best with whom (Ouchi, 1982). Work teams are constructed which minimize co-worker personality clashes, frustrations and resentments.

Goal congruency was the final significant predictor variable to enter the regression equation. Individuals who perceived that their own goals were similar to and compatible with the goals of their organization were satisfied to work for the achievement of those goals.

The rest of the Theory Z variables explained less than one-tenth of one percent of the remaining variation in job satisfaction. The lack of a situational measure of trust could account for the model explaining less than eleven percent of the total variation. Considering the significance of the job satisfaction/situational trust relationship discussed by Driscoll (1978), it seems probable that including a situational trust variable in the model would greatly improve its predictive ability.

Another potential contributing factor for the large amount of variation left unexplained in job satisfaction is the absence of other

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variables not included in the model. The literature suggests several

other variables: self-esteem, higher order need strength, the need

for achievement, salary, job level, age, tenure, and job security

(Hampton, et al, 1978; Hulin & Smith, 1965; Lopez, 1982).

A strong, statistically significant linear relationship was

found between trust and job performance. Unexpectedly, the resulting

correlation coefficients for trust with both the supervisor's evaluation

of worker performance and self-appraisal measure of performance

were negative, when the entire sample was tested. The beta-weight

for trust, obtained from the multiple regression of the Theory Z

model with performance for the entire sample, was also negative.

The results initially seemed to contradict Ouchi's premise that trust

enhances performance. Dividing the data into high and low trust

groups, though, revealed a certain complexity in the trust/job per-

formance relationship. Under conditions of high trust, the correlation

proved to be positive and significant. Conversely, under conditions

of low trust, the relationship was negative but significant at only a

ninety percent confidence level. The results lend credence to the

argument that highly trusting work group members tend to be creative

in problem solving, effective as a team, and very productive. But a

lack of trust among co-workers causes overall group performance to

degenerate.

The results of the multiple regression performed using the

entire sample showed that the overall Theory Z model was signifi-
cantly related to job performance. As the regression was performed
again under conditions of high and very high trust, the Theory Z
model explained an increasing amount of the variation in job perfor-
mance. The results indicate that as global trust increases among
members of an organization, Theory Z becomes a more viable means
of predicting job performance. Further, in each of the regressions,
global trust served as a significant predictor of performance. Yet,
even at best, under conditions of very high global trust, the model
explained less than thirty percent of the total variation in job perfor-
mance. This result reemphasizes the necessity of including a situ-
ational measure of trust in the model.

In each of the stepwise multiple regressions predicting job
performance, subtlety was the first and most explanatory variable to
enter the equation. This clearly indicates the importance of subtlety
in organizational behavior. Subtlety requires that relationships
between co-workers, managers, and subordinates are close, per-
sonal, and well understood. "The basic mechanisms of management
control in a Japanese company are so subtle, implicit, and internal
that they often appear not to exist (Ouchi, 1982:33)."

The bureaucratic machine, typical of American organiza-
tions is, on the other hand, designed to operate according to purely
objective considerations.

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> Its specific nature develops the more perfectly the bureau-
> cracy is "dehumanized," the more completely it succeeds in
> eliminating from official business love, hatred, and all purely
> personal, irrational, and emotional elements (Rourke, 1972:
> 58-59).

This data analysis supports Ouchi and raises a serious question about

the appropriateness of dehumanized organizations in modern society.

These results are in consonance with Ouchi's expectations. He con-

siders trust and subtlety to form the underlying foundations upon

which his model rests. Ouchi explains that any organization desiring

to convert to a Theory Z management style must lay the framework

for trust and subtlety to develop before the rest of the model can be

implemented. When trust exists in the organization, Theory Z can

work (Ouchi, 1982).

Job involvement and intimacy also consistently emerged as

significant predictors of performance. While the relationship

between job involvement and performance is well documented in the

literature, intimacy's contribution to explaining performance has not

been extensively explored. Intimacy, the common thread of Japanese

life, necessitates an attitude of caring, support, and disciplined

unselfishness among members of the work group. Their concern for

their organization's and co-worker's well-being is genuine and per-

formance is enhanced as individuals work diligently to satisfy

mutually compatible needs (Ouchi, 1982). The data analysis results

support this hypothesis, establishing intimacy as a key element in

explaining worker performance.

Two variables, organizational cohesiveness and goal congruency, were not significant predictors of performance. The inclusion of goal congruency also caused an increase in the amount of error contained in the model. While goal congruency was an important predictor of job satisfaction, organizational cohesiveness did not emerge as a significant predictor of either job satisfaction or performance. Ouchi (1982:195), in his discussion of organizational cohesiveness, argues that

> Individuals who are accustomed to depending upon one another; who have long-term commitment to their working relationships, and who work well together, will form cohesive groups and are naturally more adept at the problems they all must face.

The formation of a cohesive organization depends greatly on the prior existence of trust, subtlety, and commitment among workers in the organization. It should be borne in mind that the relative importance of a variable in regression depends on the other variables already in the equation. It is quite possible that organizational cohesiveness is, by itself, a significant predictor of either job satisfaction or performance, but when added to the other variables which are also predictors, cohesiveness did not add anything to the prediction. The importance of cohesiveness cannot be discounted solely on the basis of these results.

In none of the regressions did global trust emerge as the

most important variable in explaining the variance in either job satisfaction or performance. Yet the dependence of the model on trust should not be underestimated. As discussed earlier, including a situational measure of trust may significantly improve the model's predictive ability and also reveal a greater relative strength for trust within the model. Moreover, the causal influence of trust on each of the predictor variables should be recognized and tested. Causal analysis is the study of how one variable affects or is responsible for changes in another variable (Emory, 1980). According to Ouchi (1982), all of the characteristics of the Japanese management system are embedded in a complex of parts that hang together and rely upon trust and subtlety developed through intimacy. Ouchi's assertions connote that none of the predictor variables could have exhibited statistical significance without trust providing the foundation for their development. The results of the literature review and of this data analysis have shown trust to be a very complex variable. The less than explicit effects of trust on this model require more detailed investigation.

The job satisfaction/performance relationship was significantly moderated by high trust. Under conditions of high trust, the addition of the job satisfaction/trust product term to the linear regression analysis significantly improved the prediction of job performance. High personal trust in others had a strong contributory

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effect on the job satisfaction/performance relationship. This result implies that in organizations composed of highly trusting individuals, as in Japan, that the link between worker job satisfaction and job performance is enhanced by the presence of trust. Workers, who have a general disposition towards trusting people and perceive that the same type of trust is imbued in their co-workers, are motivated to perform better in a job they find satisfying. Ouchi (1982) points to this and remarks that the basic Theory Z philosophy is the notion that if you enjoy what you are doing, there is a good chance you will do a good job. "High performance and job satisfaction do go together (Ouchi, 1982:175)."

The results also show that under conditions of low trust, the addition of the trust/job satisfaction product term to the equation did not have a significant effect on the prediction of performance. It follows that global trust doesn't affect the relationship between an individual's satisfaction with a job and his job performance unless the individual is highly trusting.

The conclusions that can be drawn from these results on the moderating power of trust are again limited by the lack of a situational measure of trust. The multiple correlations obtained were not overly large, thereby indicating that other important variables also influence the job performance/satisfaction relationship. Additional research should be conducted to determine how the other Theory Z

variables, specifically subtlety and intimacy, may also influence the relationship.

Synopsis of Conclusions

In summary, the data analysis does provide empirical support for Theory Z. Since this thesis represents one of the first efforts to validate the theory, emphasis was on testing the overall model and its relation to job satisfaction and performance. The importance of trust was examined in depth and some of the questions concerning Theory Z's validity were answered, but many were raised. It can be concluded, though, that the set of variables which combine to form the Theory Z model significantly predict both job satisfaction and job performance. Although the amount of variation explained by the model was relatively small, the true predictive ability cannot be assessed until a situational measure of trust has been included and tested as a predictor variable. High global trust was shown to be a significant and positive predictor of job performance as well as a significant and positive moderator of the job satisfaction/performance relationship. Low global trust was found to be neither significantly related to job performance nor a significant moderator of the job satisfaction/performance relationship. Also, as the level of global trust increased among work members, so did the Theory Z model's accuracy in explaining job performance. Finally, intimacy and

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subtlety, two novel and less than extensively researched variables,
played crucial roles in developing the model.

Caution should be exercised if trying to generalize these
results beyond the sample. The data were not obtained in a random
fashion and cannot be considered truely representative of any parent
population.

Recommendations for Further Research

The results of this study provide empirical evidence that
Theory Z is indeed a viable management concept. Yet, a good deal of
research is still required before Theory Z is completely validated
and American managers can feel confident that implementation will
improve performance. The following questions represent various
facets of Theory Z in which further research is recommended.

1. Is situational trust a significant predictor of job performance?

2. Does including a situational measure of trust in the Theory Z
   model significantly improve the prediction of job satisfaction and
   performance?

3. Does situational trust moderate the job satisfaction/performance
   relationship?

4. How are trust and subtlety related?

5. Do the other Theory Z variables, specifically intimacy and
   subtlety, influence the job satisfaction/performance relationship?

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6. How can Theory Z transform the typical American bureaucracy, eager to improve performance, into an organization composed of workers dedicated to corporate values?

7. Can longitudinal analysis show that organizations adopting Theory Z management practices increase performance?

Since 1945, Japan's economy has emerged from the ruin and devastation of war to become the second largest in the free world. This spectacular rise has astounded and intrigued businessmen and academicians everywhere in industrial society. William G. Ouchi offers an explanation for the Japanese success and urges emulation by U.S. management. The results of this thesis highlight the substance of Theory Z and the need for more analysis.

APPENDIX A

AFIT SURVEY OF WORK ATTITUDES

AFIT SURVEY OF WORK ATTITUDES

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY (ATC)

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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V.II

PRIVACY ACT

In accordance with paragraph 30, AFR 12-35, the following information is pro-
vided as required by the Privacy Act of 1974:

a. Authority:

(1) 5 U.S.C. 301, <u>Departmental Regulations</u>; and

(2) 10 U.S.C. 8012, <u>Secretary of the Air Force, Powers, Duties,
Delegation by Compensation</u>; and

(3) EO 9397, 22 Nov 43, <u>Numbering System for Federal Accounts
Relating to Individual Persons</u>; and

(4) DOD Instruction 1100.13, 17 Apr 68, <u>Surveys of Department of
Defense Personnel</u>; and

(5) AFR 30-23, 22 Sep 76, <u>Air Force Personnel Survey Program</u>.

b. Principal purposes. The survey is being conducted to collect infor-
mation to be used in research aimed at illuminating and providing inputs to
the solution of problems of interest to the Air Force and DOD.

c. Routine uses. The survey data will be converted to information for
use in research of management related problems. Results of the research,
based on the data provided, will be included in a written master's thesis and
may also be included in published articles, reports, or texts. Distribution
of the results of the research, based on the survey data, whether in written
form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who
elects not to participate in any or all of this survey.

The purpose of this questionnaire is to obtain information about you, your job, your work group and your organization. Specifically, this information is being collected in support of research assessing employee attitudes toward different aspects of their work environment.

Please be assured that all information you provide will be held in the strictest confidence. Your individual responses will NOT be provided to management or to any other agency. Feedback on the study's results will be presented to management only in terms of group averages describing what the "typical" employee would say. In addition, when the results of this study are published, readers will NOT be able to identify specific individuals or work groups.

A primary objective of this study is to track changes in worker attitudes over time. You will be asked to complete another survey at some later date. In order to detect any changes in worker attitudes, some means was needed to connect responses provided by an employee at different times. At the same time, the research team wishes to protect the anonymity of all participants. A procedure was developed to achieve both of these objectives. We ask your indulgence in complying with this procedure.

Questionnaire Tracking Procedure

On the computer scored response form you were provided you will find a five digit survey control number in the box labeled "identification number." Each employee has a different survey control number. An employee of the organization has agreed to serve as an intermediary in this procedure. When you complete your questionnaire this person will ask you for your survey control number and your social security number. That employee will retain this information on a master list. You will then turn your questionnaire in directly to a representative of the research team. This procedure will be followed for future administrations of the survey. The intermediary will have a key by which survey control numbers may be linked via social security numbers. He or she will not have access to any questionnaire responses. The research team will see completed questionnaires, but will only be told that one arbitrary survey control number should be paired with another. In this way, we feel we have provided for attainment of both aims of the study—employee anonymity and a means of tracking attitude changes.

Thank you for your cooperation in participating in this study. If you have any questions, please contact the researcher at the following address:

Major N. K. Ovalle, 2d, DBA
or
Robert P. Steel, PhD
Wright-Patterson AFB OH 45433
Telephone: AUTOVON 785-4435

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The following are definitions of key words that recur throughout the questionnaire:

1. Supervisor: The person to whom you report directly.

2. Work Group: All persons who report to the same supervisor that you do. (If you are a supervisor, your work group is the group of employees that report directly to you).

3. Organization:

INSTRUCTIONS

This questionnaire contains 137 items (individual "questions"). The questionnaire booklet is broken into two parts. Part I contains the first 80 items in this booklet, and Part II contains the remaining 57 items. All items must be answered by filling in the appropriate spaces on the machine-scored response sheets provided. If for any item you do not find a response that fits your situation exactly, use the one that is the closest to the way you feel.

Please use a "soft-lead" (No. 2) pencil, and observe the following:

1. **Make heavy** black marks that fill in the space (of the response you select).

2. **Erase cleanly** any responses you wish to change.

3. **Make no** stray markings of any kind on the response sheet.

4. **Do not** staple, fold or tear the response sheet.

5. **Do not** make any markings on the questionnaire booklet.

You have been provided with two answer sheets. Do **NOT** fill in your name on either sheet so that your responses will be anonymous. Please note that both sheets have a survey control number ending with either "1" or "2." Please use the answer sheet with the survey control number **ending** with the number "1" to respond to the 80 items in Part I of the survey. Answer the items in Part II (numbered from 1 to 57) on the answer sheet with the survey control number **ending** in "2."

Each response block has 10 spaces (numbered 1 through 10) or a 1-10 scale. The questionnaire items normally require a response from 1-7 only, therefore, you will rarely need to fill in a space numbered 8, 9, or 10. Questionnaire items are responded to by marking the appropriate space on the answer sheet as in the following example:

SCALE:

    1 = Strongly disagree   5 = Slightly agree
    2 = Moderately disagree   6 = Moderately agree
    3 = Slightly disagree   7 = Strongly agree
    4 = Neither agree nor disagree

Sample item 1:

The guidance you recei e in your job from your supervisor is frequently unclear.

(If you "moderately agree" with sample item #1, you would "blacken in" the corresponding number of that statement (moderately agree = 6) on the answer sheet for item numbered "sample item 1.")

Sample response: 1 2 3 4 5 6 7 8 9 10
               ☐☐☐☐☐■☐☐☐☐

BACKGROUND INFORMATION

This section of the survey contains several items dealing with personal characteristics. This information will be used to obtain a picture of the background of the "typical employee."

1. Your age is:

   1. Less than 20
   2. 20 to 25
   3. 26 to 30
   4. 31 to 40
   5. 41 to 50
   6. 51 to 60
   7. More than 60

2. Your highest educational level obtained was:

   1. Non high school graduate
   2. High school graduate or GED
   3. Some college work
   4. Associate degree or LPN
   5. Bachelor's degree or RN
   6. Some graduate work
   7. Master's degree
   8. Doctoral degree

3. Your sex is:

   1. Male
   2. Female

4. Total months in this organization is:

   1. Less than 1 month
   2. More than 1 month, less than 6 months
   3. More than 6 months, less than 12 months
   4. More than 12 months, less than 18 months
   5. More than 18 months, less than 24 months
   6. More than 24 months, less than 36 months
   7. More than 36 months.

5. How many people do you directly supervise (i.e., those for which you write performance reports)?

   1. None
   2. 1 to 2
   3. 3 to 5
   4. 6 to 8
   5. 9 to 12
   6. 13 to 20
   7. 21 or more

6. You are a (an):

   1. Officer
   2. Enlisted
   3. Civilian (GS)
   4. Civilian (WG)
   5. Non-appropriated Fund (NAF employee)
   6. Other

7. Your grade level is:

   1. 1-2
   2. 3-4
   3. 5-6
   4. 7-8
   5. 9-10
   6. 11-12
   7. 13-15
   8. Senior Executive Service

JOB SATISFACTION

Below are 5 items which relate to the degree to which you are satisfied with various aspects of your job. Read each item carefully and choose the statement below which best represents your opinion.

1 = Delighted
2 = Pleased
3 = Mostly satisfied
4 = Mixed (about equally satisfied and dissatisfied)
5 = Mostly dissatisfied
6 = Unhappy
7 = Terrible

8. How do you feel about your job?

9. How do you feel about the people you work with--your co-workers?

10. How do you feel about the work you do on your job--the work itself?

11. What is it like where you work--the physical surroundings, the hours, the amount of work you are asked to do?

12. How do you feel about what you have available for doing your job--I mean equipment, information, good supervision, and so on?

SUPERVISOR'S ASSESSMENT OF YOUR PERFORMANCE

The following statements deal with _feedback_ you receive _from_ _your_ _supervisor_ _concerning your performance_. Your frame of reference should be your supervisor's evaluation of your performance in terms of formal feedback (i.e., periodic, written performance appraisals) and informal feedback (i.e., verbal communication on a day-to-day basis). Please think carefully about his/her evaluations of you over the past six months or so.

Based upon the feedback you have received from your supervisor, use the rating scale below to indicate how your job performance would _compare_ with _other_ _employees_ doing _similar_ _work_.

```
1 = Far worse
2 = Much worse
3 = Slightly worse
4 = About average
5 = Slightly better
6 = Much better
7 = Far better
```

13. Compared with other employees doing similar work, your supervisor considers the _quantity_ of the work you produce to be:

14. Compared with other employees doing similar work, your supervisor considers the _quality_ of the work you produce to be:

15. Compared with other employees performing similar work, your supervisor believes the _efficiency_ of your use of available resources (money, materials, personnel) in producing a work product is:

16. Compared with other employees performing similar work, your supervisor considers your ability in _anticipating_ _problems_ and either preventing or minimizing their effects to be:

17. Compared with other employees performing similar work, your supervisor believes your _adaptability/flexibility_ in handling high-priority work (e.g., "crash projects" and sudden schedule changes) is:

JOB EFFORT RATING

18. As fairly and objectively as you can, rate the typical amount of effort you normally put into doing your work.

     1 = Very little effort
     2 = Enough effort to get by
     3 = Moderate effort
     4 = More effort than most
     5 = Very much effort

FUTURE WORK PLANS

Use the rating scale given below to indicate your future work plans with respect to the Air Force or whatever equivalent service/company to which you belong.

19. Within the coming year, if I have my own way:

     1 = I definitely intend to remain with the Air Force.
     2 = I probably will remain with the Air Force.
     3 = I have not decided whether I will remain with the Air Force.
     4 = I probably will not remain with the Air Force.
     5 = I definitely intend to separate from the Air Force.

ORGANIZATIONAL INFORMATION

Listed below are a series of statements that represent possible feelings that individuals might have about the company or organization for which they work. Use the following rating scale to indicate your own feelings about the particular organization for which you are now working.

     1 = Means you strongly disagree with the statement.
     2 = Means you moderately disagree with the statement.
     3 = Means you slightly disagree with the statement.
     4 = Means you neither agree nor disagree with the statement.
     5 = Means you slightly agree with the statement.
     6 = Means you moderately agree with the statement.
     7 = Means you strongly agree with the statement.

20. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.

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1 = Means you <u>strongly disagree</u> with the statement.
2 = Means you <u>moderately disagree</u> with the statement.
3 = Means you <u>slightly disagree</u> with the statement.
4 = Means you <u>neither agree nor disagree</u> with the statement.
5 = Means you <u>slightly agree</u> with the statement.
6 = Means you <u>moderately agree</u> with the statement.
7 = Means you <u>strongly agree</u> with the statement.

21. I talk up this organization to my friends as a great organization to work for.

22. I feel very little loyalty to this organization.

23. I would accept almost any type job assignment in order to keep working for this organization.

24. I find that my values and the organization's values are very similar.

25. I am proud to tell others that I am part of this organization.

26. I could just as well be working for a different organization as long as the type of work was similar.

27. This organization really inspires the very best in me in the way of job performance.

28. It would take very little change in my present circumstances to cause me to leave this organization.

29. I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.

30. There's not too much to be gained by sticking with this organization indefinitely.

31. Often, I find it difficult to agree with this organization's policies on important matters relating to its employees.

32. I really care about the fate of this organization.

33. For me this is the best of all possible organizations for which to work.

34. Deciding to work for this organization was a definite mistake on my part.

JOB INFORMATION

Use the following rating scale for the 15 statements to express your own
feelings about your present job or work.

1. Means you strongly disagree with the statement
2. Means you moderately disagree with the statement
3. Means you slightly disagree with the statement
4. Means you neither disagree nor agree with the statement.
5. Means you slightly agree with the statement.
6. Means you moderately agree with the statement.
7. Means you strongly agree with the statement.

35. I often have to use the skills I have learned for my job.

36. I often have a chance to try out my own ideas.

37. I often have a chance to do things my own way.

38. I often have a chance to do the kinds of things that I am best at.

39. I often feel at the end of the day that I've accomplished something.

40. The most important things that happen to me involve my work.

41. The most important things I do involve my work.

42. The major satisfaction in my life comes from my job.

43. The activities which give me the greatest pleasure and personal satis-
tion involve my job.

44. I live, eat, and breathe my job.

45. I would rather get a job promotion than be a more important member of my
club, church, or lodge.

46. How well I perform on my job is extremely important to me.

47. I feel badly if I don't perform well on my job.

48. I am very personally involved in my work.

49. I avoid taking on extra duties and responsibilities.

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WORK ROLE ATTITUDES

This section of the questionnaire contains a number of statements that relate to feelings about your work group, the demands of your job, and the supervision you receive. Use the following rating scale to indicate the extent to which you agree or disagree with the statements shown below.

```
1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Neither agree nor disagree
5 = Slightly agree
6 = Moderately agree
7 = Strongly agree
```

50. Within my work-group the people most affected by decisions frequently participate in making the decisions.

51. In my work-group there is a great deal of opportunity to be involved in resolving problems which affect the group.

52. I am allowed to participate in decisions regarding my job.

53. I am allowed a significant degree of influence in decisions regarding my work.

54. My supervisor usually asks for my opinions and thoughts in decisions affecting my work.

55. My job (e.g., the type of work, amount of responsibility, etc.) causes me a great deal of personal stress and anxiety.

56. Relations with the people I work with (e.g., co-workers, supervisor, subordinates) cause me a great deal of stress and anxiety.

57. General aspects of the organization I work for (e.g., policies and procedures, general working conditions) tend to cause me a great deal of stress and anxiety.

58. Most people are not always straightforward and honest when their own interests are involved.

59. In these competitive times one has to be alert or someone is likely to take advantage of you.

60. It is safe to believe that in spite of what people say, most people are primarily interested in their own welfare.

61. There is a high spirit of teamwork among my co-workers.

62. Members of my work group take a personal interest in one another.

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63. If I had a chance to do the same kind of work for the same pay in another work group, I would still stay here in this work group.

64. My immediate supervisor makes an effort to help people in the work group with their personal problems.

65. My immediate supervisor insists that members of our work group follow to the letter all policies and procedures handed down to him.

66. My immediate supervisor seeks the advice of our work group on important matters before going ahead.

67. My immediate supervisor pushes the people under him (or her) to insure they are working up to capacity.

68. My organization provides all the necessary information for me to do my job effectively.

69. My work group is usually aware of important events and situations.

70. The people I work with make my job easier by sharing their ideas and opinions with me.

71. People in my work group are never afraid to speak their minds about issues and problems that affect them.

WORK GOALS

The following statements deal with your perceptions of the nature of goals and objectives that guide your work. Use the rating scale given below to indicate the extent to which your work goals have the characteristics described.

        1 = Strongly disagree
        2 = Moderately disagree
        3 = Slightly disagree
        4 = Neither agree nor disagree
        5 = Slightly agree
        6 = Moderately agree
        7 = Strongly agree

72.   I know exactly what is expected of me in performing my job.

73.   I understand clearly what my supervisor expects me to accomplish on the job.

74.   What I am expected to do at work is clear and unambiguous.

75.   I understand the priorities associated with what I am expected to accomplish on the job.

76.   It takes a high degree of skill on my part to attain the results expected for my work.

77.   Results expected in my job are very difficult to achieve.

78.   It takes a lot of effort on my part to attain the results expected for my work.

79.   I must work hard to accomplish what is expected of me for my work.

80.   I must exert a significant amount of effort to attain the results expected of me in my job.

Your first answer sheet should now be completely filled. If it is not completely filled, go back and check the sequencing of your answers. You may have skipped an item. Use the second answer sheet (the survey control number ends in "2") to respond to the remaining items in the questionnaire (those in Part II).

PART II

1. Means you <u>strongly disagree</u> with the statement
2. Means you <u>moderately disagree</u> with the statement
3. Means you <u>slightly disagree</u> with the statement
4. Means you <u>neither disagree nor agree</u> with the statement.
5. Means you <u>slightly agree</u> with the statement.
6. Means you <u>moderately agree</u> with the statement.
7. Means you <u>strongly agree</u> with the statement.

1. The amount of work I am expected to accomplish on the job is realistic.

2. The results I am expected to attain in my work are realistic.

3. What my supervisor expects me to accomplish on my job is not impossible.

4. I find that the results that I am expected to attain in my work are achievable.

JOB CHARACTERISTICS

This part of the questionnaire asks you to describe your job, as _objectively_ as you can.

Please do _NOT_ use this part of the questionnaire to show how much you like or dislike your job. Questions about that will come later. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below:

A. To what extent does your job require you to work with mechanical equipment?

```
1---------2---------3---------4---------5---------6---------7
```

Very little; the job	Moderately	Very much; the
requires almost		job requires
no contact with		almost constant
mechanical		work with
equipment of		mechanical
any kind.		equipment.

Indicate on the answer sheet the number which is the most accurate description of your job. If, for example, your job requires you to work with mechanical equipment a good deal of the time, but also requires some paperwork, you might choose the number six, so you would blacken "6" in on the answered sheet.

If you do not understand these instructions, please ask for assistance. If you do understand them, turn the page and begin.

5. How much _autonomy_ is there in your job? That is, to what extent does your job permit you to decide _on your own_ how to go about doing the work?

1-----------2-----------3-----------4-----------5-----------6-----------7

Very little; the job gives   Moderate autonomy; many   Very much; the job
me almost no personal "say"   things are standardized   gives almost com-
about how and when the work   and not under my control,   plete responsibility
is done.   but I can make some deci-   for deciding how and
                                    sions about the work.   when the work is done.

6. To what extent does your job involve doing a _"whole" and identifiable_ _piece of work_? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small _part_ of the overall piece of work, which is finished by other people or by automatic machines?

1-----------2-----------3-----------4-----------5-----------6-----------7

My job is only a tiny   My job is a moderate-   My job involves doing
part of the overall piece   sized "chunk" of the   the whole piece of
of work; the results of my   overall piece of work; my   work; from start to
activities cannot be seen in   own contribution can be   finish; the results
the final product or service.   seen in the final outcome.   of my activities are
                                                                    easily seen in the
                                                                    final product or
                                                                    service.

7. How much _variety_ is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1-----------2-----------3-----------4-----------5-----------6-----------7

Very little; the job   Moderate variety.   Very much; the job requires
requires me to do the   me to do many different
same routine things over   things, using a number of
and over again.   different skills and talents.

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8. In general, how _significant or important_ is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?

1-----------2-----------3-----------4-----------5-----------6-----------7

Not very significant; the   Moderately significant.   Highly significant; the
outcomes of my work are   outcomes of my work can
not likely to have impor-   affect other people in
tant effects on other people   very important ways.

Section Two

Listed below are a number of statements which could be used to describe a job. You are to indicate whether each statement is an _accurate_ or an _inaccurate_ description of _your_ job. Once again, please try to be as objective as you can in deciding how accurately each statement describes your job--regardless of whether you like or dislike your job.

How accurate is the statement in describing your job?

1	2	3	4	5	6	7
Very	Mostly	Slightly	Uncertain	Slightly	Mostly	Very
Inaccurate	Inaccurate	Inaccurate		Accurate	Accurate	Accurate

9. The job requires me to use a number of complex or high-level skills.

10. The job is arranged so that I do _not_ have the chance to do an entire piece of work from beginning to end.

11. The job is quite simple and repetitive.

12. This job is one where a lot of other people can be affected by how well the work gets done.

13. The job denies me any chance to use my personal initiative or judgment in carrying out the work.

14. The job provides me the chance to completely finish the pieces of work I begin.

15. The job gives me considerable opportunity for independence and freedom in how I do the work.

16. The job itself is not very significant or important in the broader scheme of things.

JOB FEEDBACK

Use the rating scale below to indicate how you feel about the following two questions.

    1 = Very little
    2 = Little
    3 = A moderate amount
    4 = Much
    5 = Very much

17. To what extent do you find out how well you are doing on the job as you are working?

18. To what extent do you receive information from your superior on your job performance.

    Use the same rating scale to indicate how much job feedback is present in your job.

19. The feedback from my supervisor on how well I am doing.

20. The opportunity to find out how well I am doing in my job.

21. The feeling that I know whether I am performing my job well or poorly.

TASK PREFERENCES

Below are listed ten statements that describe various things people do or try to do on their jobs. We would like to know which of the statements you feel most accurately describe your own behavior when you are at work. Please use the following scale to indicate the word (or phrase) which best describes your own actions. Remember, there are no right or wrong answers. Please answer all questions frankly.

    1 = Never
    2 = Almost never
    3 = Seldom
    4 = Sometimes
    5 = Usually
    6 = Almost always
    7 = Always

22. I do my best work when my job assignments are fairly difficult.

23. I try very hard to improve on my past performance at work.

24. I take moderate risks and stick my neck out to get ahead at work.

25. I try to avoid any added responsibilities on my job.

26. I try to perform better than my co-workers.

27. When I have a choice, I try to work in a group instead of by myself.

28. I pay a good deal of attention to the feelings of others at work.

29. I prefer to do my own work and let others do theirs.

30. I express my disagreements with others openly.

31. I find myself talking to others around me about non-business related matters.

TASK DEMANDS

This section of the questionnaire contains a number of statements about your
job. Use the following rating scale to indicate the extent to which you agree
or disagree with the statements shown below.

1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Neither agree nor disagree
5 = Slightly agree
6 = Moderately agree
7 = Strongly agree

32. The job offers me a chance to test myself and my abilities.

33. Doing this job well is a reward in itself.

34. If the work were only more interesting I would be motivated to perform better.

35. Mastering the job meant a lot to me.

36. My talents, or where I can concentrate my attention best, are found in
    areas not related to this job.

37. This job is valuable to me for no other reason than I like to do it.

38. At times I can get so involved in my work that I forget what time it is.

39. Even though the work here could be rewarding, I am frustrated and find
    motivation continuing only because of my paycheck.

40. I honestly believe I have all the skills necessary to perform this task well.

41. I would make a fine model for an apprentice to follow in order to learn
    the skills he/she would need to succeed.

42. No one knows this job better than I do.

43. If anyone here can find the answer, I'm the one.

44. I do not know as much as my predecessor did concerning this job.

SITUATIONAL ATTRIBUTES

These items deal with various attributes and characteristics of your job situation.

1 = Strongly disagree
2 = Moderately disagree
3 = Slightly disagree
4 = Neither agree nor disagree
5 = Slightly agree
6 = Moderately agree
7 = Strongly agree

45. My supervisor knows his/her workers very well; that is, he/she can pinpoint personalities and thereby decides who works well with whom.

46. There is a great deal of support and unselfishness in our work group.

47. Members of our work group are treated equally in terms of their worth to the workgroup.

GOAL AGREEMENT

1 = Not at all
2 = To a very little extent
3 = To a little extent
4 = To a moderate extent
5 = To a fairly large extent
6 = To a great extent
7 = To a very great extent

48. To what extent are your organization's goals compatible with your own personal goals?

SELF PERCEIVED ABILITY

1 = Much less ability than others
2 = Less ability than others
3 = Typical or average ability
4 = More ability than others
5 = Much more ability than others

49. Compared to others whose job is similar to yours how would you rate your ability to perform the work?

ORGANIZATIONAL PERCEPTIONS

Some organizations go out of their way to take care of their employees. They have a genuine interest in the welfare of their workers. They have many ways of communicating to their workers that they are valued and respected. Other organizations have developed a reputation among their workforce as uncaring impersonal creations. These organizations often treat their employees in a dehumanized fashion -- as if the workers were little more than cogs in a well-oiled machine.

Most organizations fall somewhere between those two extremes. Use the bipolar rating scales given below to indicate the degree to which you have seen your organization demonstrate a concern for the welfare of its employees.

For example: If your organization appeared "flexible" most of the time when dealing with its employees, you might rate it as shown.

Rigid--1--2--3--4--5--(6)--7--Flexible

50. Unconcerned--1--2--3--4--5--6--7--Concerned

51. Impersonal--1--2--3--4--5--6--7--Humane

52. Uncaring--1--2--3--4--5--6--7--Caring

53. Disinterested--1--2--3--4--5--6--7--Interested

54. Aloof--1--2--3--4--5--6--7--Friendly

The remaining three items are used for administrative purposes. They indicate the type of survey (first, second, etc.) and the sponsoring organization involved.

55. Please fill in response choice Number "1" for this item.

56. Pleae fill in response choice Number "1" for this item.

57. Please fill in response choice Number " " for this item.

THANK YOU FOR YOUR COOPERATION

APPENDIX B

AFIT SURVEY OF
SUPERVISORY PERFORMANCE APPRAISALS

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SUPERVISOR'S RATING
FORM

Rating Form Code Number

INSTRUCTIONS: Use the rating scales given below to indicate the "typical" job effectiveness of the employee identified above. Please complete all the items on this form. Note that each rating scale refers to a different aspect of work performance so there may be some amount of variation between the performance dimensions shown for a single individual. Circle the number beside each performance dimension that best describes this worker's performance compared to the performance of other employees doing similar work.

	Far Worse	Much Worse	Slightly Worse	About Average	Slightly Better	Much Better	Far Better
1. Quantity of Output	1	2	3	4	5	6	7

Def: The productivity of an employee in terms of units of work produced or services rendered.

2. Quality of work	1	2	3	4	5	6	7

Def: The degree to which work products are free from error and/or conform to standards and specifications.

3. Efficiency of Work	1	2	3	4	5	6	7

Def: The degree to which resources (e.g., money, materials, personnel) are used to their maximum capacity and waste is kept to a minimum.

4. Problem-Solving Capacity	1	2	3	4	5	6	7

Def: Represents the ability of an employee to anticipate problems that may come up and either prevent them or minimize their effects upon the operations of the work unit.

5. Adaptability/Flexibility	1	2	3	4	5	6	7

Def: Represents the ability of an employee to adjust to special circumstances (e.g., "crash projects" and sudden schedule changes) and perform under less than optimal conditions.

6. Overall Effectiveness	1	2	3	4	5	6	7

PLEASE TURN THIS PAGE OVER AND COMPLETE PERFORMANCE RATING

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